



MEETING BETWEEN
THE DEPUTY MINISTER OF INFRASTRUCTURE AND COMMUNITIES AND
THE DEPUTY MINISTER OF NATURAL RESOURCES CANADA

MEETING DETAILS

- **DATE/TIME:** Tuesday, March 27, 2018, 9:00 to 10:00 a.m.
- **LOCATION:** 10th Floor, 427 Laurier West, Ottawa.
- **PARTICIPANTS:**
 - Kelly Gillis, Deputy Minister of Infrastructure and Communities
 - Yazmine Laroche, Associate Deputy Minister of Infrastructure and Communities
 - David Murchison, Assistant Deputy Minister, Policy and Results
 - Eric Landry, Director General, North, Atlantic, and Ontario
 - Nathalie Lechasseur, Director General, Quebec-West
 - Tushara Williams, Director General, Sectoral Policy, Data, and Research

 - Christyne Tremblay, Deputy Minister of Natural Resources Canada
 - André Bernier, Senior Director, Renewable and Electrical Energy Division

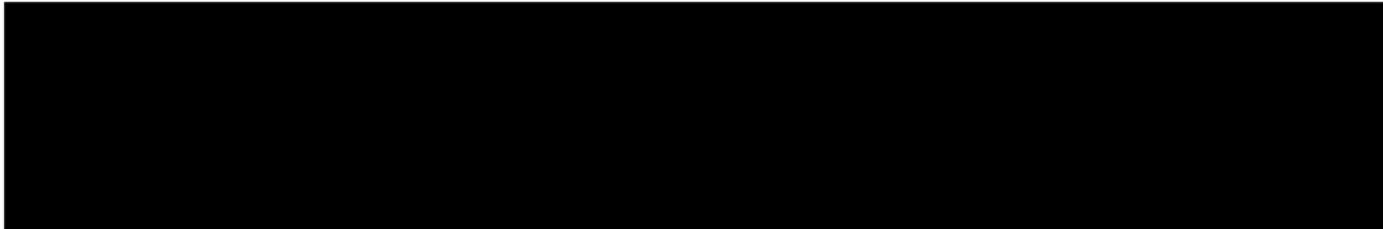
ISSUE

- The purpose of this meeting is to further discuss opportunities to advance strategic intertie projects under the Integrated Bilateral Agreements (IBAs) [REDACTED]

[REDACTED] An agenda, supplied by Natural Resources Canada (NRCan), appears at **Annex A**.

HIGHLIGHTS/KEY CONSIDERATIONS

- Though Infrastructure Canada (INFC) and the Canada Infrastructure Bank (CIB) hold the bulk of available funding for electricity-focused infrastructure, NRCan is the federal lead on electricity. NRCan is therefore seeking to engage its federal partners in actively promoting the benefits of intertie projects to the provinces and territories. DM Tremblay will likely emphasize the strategic value of electricity interties in advancing Canada's objectives under the Pan-Canadian Framework on Clean Growth and Climate Change (see **Annex B**).



- INFC will require additional information regarding specific interties in order to assess their eligibility under the integrated bilateral agreements (IBAs). Further information on the support available through the IBAs and the CIB can be found at **Annex C**.

KEY BACKGROUND

- DM Tremblay has been reaching out to her provincial and territorial counterparts to highlight funding opportunities for interties that are available under the IBAs. NRCan has provided a list of key interties (New Brunswick – Nova Scotia, Manitoba – Saskatchewan, and transmission lines within British Columbia) it feels might be good candidates for the IBAs (see **Annex D**). [REDACTED]

[REDACTED] More detailed information on provincial and territorial priorities will become available as projects are submitted, and/or through the rolling three-year infrastructure plans.

- INFC does not yet have sufficient information to fully assess the eligibility or potential cost-sharing ratios of the interties NRCan has identified. [REDACTED]
- [REDACTED]

- The Green Infrastructure stream's capacity to support large-scale electricity projects, including grid interties, will depend heavily on the size of the relevant Green stream allocation and how individual projects balance against other jurisdictional climate change mitigation, adaptation, and environmental quality priorities. Relevant provincial Green stream allocations can be found at **Annex F**. A broader overview of key issues in the electricity sector also follows at **Annex G**.

SECRET

- The CIB will be involved in projects where it could crowd-in private investment that otherwise would not have been attracted to a particular project. The CIB will not displace private capital seeking investment opportunities. Nova Scotia Power, unlike most other provincial utilities, already employs private capital as a private, wholly owned subsidiary of Emera Inc.

[REDACTED] The CIB will continue to work with NRCan to determine if interties or other electricity-sector projects can be structured to meet the Bank's requirements.

- INFC has approached NRCan to seek their views as we establish a definition of clean energy under the IBAs. While DM Tremblay is not expected to raise this topic, background information on the issue is available at **Annex H**.

POINTS TO REGISTER

ITEM 1: Electricity in the context of the Pan-Canadian Framework

- We are communicating to the provinces and territories that, over the life of the program, they will be expected to use the climate change mitigation sub-stream to advance their key actions under the Pan-Canadian Framework. I understand that most jurisdictions have listed clean energy generation and/or transmission among their key actions. We have also introduced a number of measures, including a cost-per-tonne metric and the 45% minimum investment floor for mitigation projects, to try to ensure that these critical projects are prioritized under the Green Infrastructure stream.

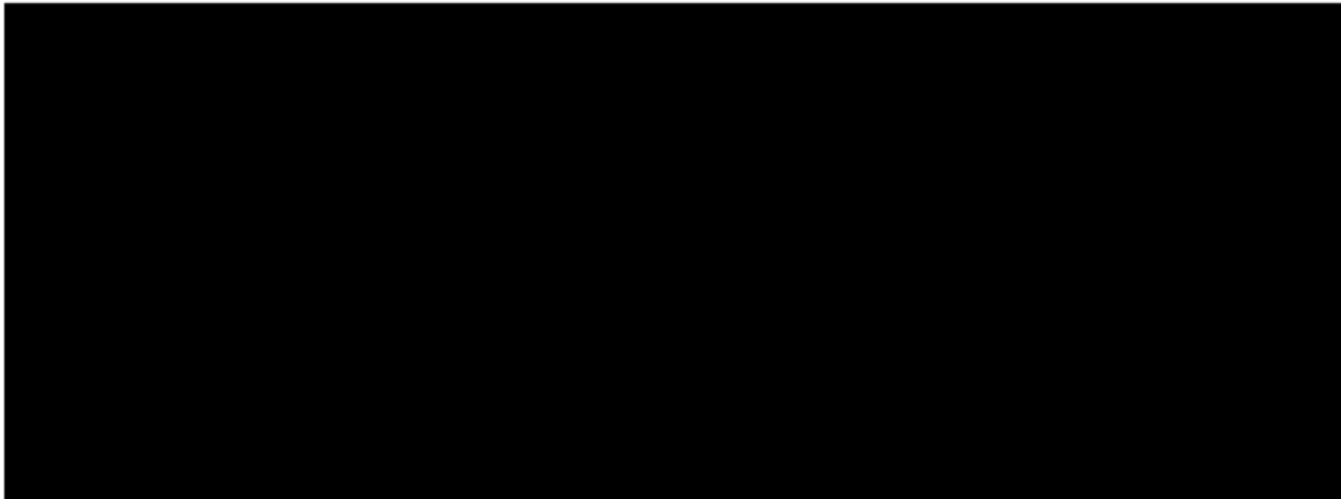
ITEM 2a: Aligning federal funding mechanisms


- As you know, the wide variance in provincial allocation sizes will impact the degree to which the Green stream of the IBAs can support large-scale interties. Prioritization decisions will likely hinge on the size of the relevant allocation and pressures from other local priorities.

ITEM 2b: Encouraging PTs to prioritize electricity infrastructure investments

- Thank you for taking the time to reach out to your provincial and territorial counterparts to raise awareness of opportunities available under the IBAs. As you know, my department typically engages with Ministries of infrastructure or transportation, who are not always attuned to their jurisdictional electricity priorities.
- I look forward to working together to promote the Green infrastructure stream and advance government priorities for the electricity sector. However, it will be really important for you to

encourage your energy Ministry counterparts in the provinces to reach out to their infrastructure colleagues as well, so that they can try to get these projects into their 3-year plans.




- Annex A –** Agenda (supplied by NRCan)
- Annex B –** Electricity in the context of the Pan-Canadian Framework for Clean Growth and Climate Change
- Annex C –** Opportunities for interties under the IBAs and CIB
- Annex D –** Overview of promising interties (supplied by NRCan)
- Annex E –** Update on strategic interties – summary and deck (circulated for February 2018 PCF-DMC)
- Annex F –** Relevant provincial Green Infrastructure stream allocations
- Annex G –** Electricity sector overview
- Annex H –** 

**MEETING BETWEEN
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Tuesday, March 27, 2018,
9:00 AM – 10:00 AM.
10th Floor, 427 Laurier West, Ottawa.

AGENDA

- 1. Electricity in the context of the Pan-Canadian Framework**
 - 2. Encouraging PTs to prioritize electricity infrastructure investments**
 - a. Aligning federal funding mechanisms (programs, IBAs, LCEF, Bank)
 - b. Broadening federal engagement on IBA discussions
- 

Electricity in the Context of the Pan-Canadian Framework on Clean Growth and Climate Change

The framework's approach to electricity seeks to:

- (1) *Increase the amount of electricity generated from renewable and low-emitting sources;*
- (2) *Connect clean power with places that need it;*
- (3) *Modernize electricity systems; and*
- (4) *Reduce reliance on diesel working with Indigenous Peoples and northern and remote communities.*

Provincial/Territorial Key Actions Linked to the Electricity Sector:

PT	Key Action
British Columbia	Electricity Grid Interconnection – British Columbia and the Governments of Canada and Alberta will work together to restore the capability of the existing high-voltage electricity grid interconnection with Alberta. This project will improve access to clean electricity in Alberta and will result in lower GHG emissions and air pollution, and improved grid reliability in both provinces.
	100% Clean Electricity – BC's electricity is already 98% clean or renewable and the \$8.3B Site C Clean Energy project is a major part of B.C.'s clean energy future. The project will create enough electricity to power 450,000 homes.
Alberta	BC-Alberta Intertie – Alberta is working with British Columbia and the federal government to explore new and enhanced interties. The Alberta Electric System Operator is currently working with BC Hydro and industry on a key project, the restoration of the B.C.-Alberta 950 MW intertie to its full path rating (expected completion is in 2020). This restoration would allow imports of 1200 MW on the BC-AB intertie.
	Coal Phase-Out – Alberta will phase-out GHGs from coal-fired power plants and achieve 30% renewable energy by 2030.
	Clean Electricity – Alberta and the federal government will to work together to advance <u>renewable energy</u> , <u>coal to natural gas conversion</u> , and <u>potential hydroelectric projects</u> , including pump storage projects. Alberta is committed to developing incentives for renewable generation in a manner that is compatible with Alberta's unique electricity market.
Ontario	Electricity Transmission – Ontario, in collaboration with the Government of Canada, will work with its regional partners to advance opportunities to expand and upgrade electricity <u>transmission infrastructure</u> to support clean hydroelectric power to <u>displace the production of electricity from fossil fuels</u> . Ontario will also collaborate with the Government of Canada to accelerate access to clean electricity in remote Indigenous communities. This will lessen dependence on expensive diesel fuel and reduce greenhouse gas emissions and air pollution.
Québec	2016-2030 Energy Policy – The Energy Policy will favour a transition to a low

PT	Key Action
	<p>carbon footprint economy, chiefly by <u>improving energy efficiency by 15%</u>, by reducing petroleum consumption by 40%, and by <u>increasing the production of renewable energies by 25%</u>. Québec is one of the world's main producers of renewable energy, which represents 99.8% of its total electricity production.</p> <p>Energy Efficiency and Conversion – Québec will:</p> <ol style="list-style-type: none"> 1) Speed up the reduction of GHG emissions in Northern communities, as well as on the Lower North Shore and Magdalen Islands, by replacing diesel with renewable energy sources for the electricity supply of their free-standing network. 2) Promote the implementation of energy performance and efficiency standards for new buildings, as well as for the renovation of existing buildings. 3) Invest in the industrial sector to improve the energy performance of fixed production processes, by providing innovative technologies and reducing the use of gases with high warming potential such as hydrofluorocarbons, which Québec will continue to prioritize.
New Brunswick	<p>Enhanced Electricity Generation and Transmission System – New Brunswick will work with the other Atlantic provinces and the Government of Canada to advance opportunities for clean electricity <u>generation, transmission, storage and demand management</u> linkages across the region. This will: improve access to non-emitting electricity; support the phase-out of coal-fired electricity generation; improve grid reliability and energy security; and, consistent with fair market principles, help provinces access export markets for clean, non-emitting electricity. This will contribute to both the Atlantic Growth Strategy and Canadian Energy Strategy and will build on existing regional coordination efforts, leading to an integrated regional electricity strategy.</p> <p>Energy Efficiency – The Government of New Brunswick, in partnership with the Government of Canada, will seek to enhance energy efficiency programs by targeting GHG emission reduction opportunities across sectors and fuels.</p>
Nova Scotia	<p>Regional Electricity Grid Connections – Nova Scotia will work with the other Atlantic provinces and the Government of Canada to advance opportunities for clean electricity <u>generation, transmission, storage and demand management</u> linkages across the region. This will: improve access to non-emitting electricity; support the phase-out of coal-fired electricity generation; improve grid reliability and energy security; and, consistent with fair market principles, help provinces access export markets for clean, non-emitting electricity. This will contribute to both the Atlantic Growth Strategy and Canadian Energy Strategy and will build on existing regional coordination efforts, leading to an integrated regional electricity strategy.</p> <p>Renewable Energy Generation, Transmission and Storage – Nova Scotia, in partnership with the Government of Canada, will work together to advance opportunities for renewable energy generated from sources such as <u>wind, tidal and solar</u>, as well as the enabling <u>transmission and storage infrastructure</u> to ensure growth beyond current technical limits. Research and development capacity will continue to be strengthened.</p> <p>Energy Efficiency – Nova Scotia and the Government of Canada are</p>

PT	Key Action
	committed to partnering to enhance the existing provincial energy efficiency programs for homes and businesses with the objective of reducing energy use and saving energy costs. This could include expanded energy efficiency programs, efforts to accelerate the electrification of homes and businesses through heat pumps and smart meters, district energy systems, as well as electric vehicle infrastructure.
Prince Edward Island	<p>Clean Energy – Energy resilience and security and a move to greater electrification are key priorities for the province. Prince Edward Island, in partnership with the Government of Canada, will work to expand its world-class wind resource, invest in solar, and enable greater integration of renewable energy through storage. Prince Edward Island will work with the other Atlantic Provinces and the Government of Canada to advance opportunities for clean <u>electricity generation</u>, <u>transmission</u>, <u>storage</u> and <u>demand management</u> linkages across the region. This will: improve access to non-emitting electricity; support the phase-out of coal-fired electricity generation; improve grid reliability and energy security; and, consistent with fair market principles, help provinces access export markets for clean, non-emitting electricity. This will contribute to both the Atlantic Growth Strategy and Canadian Energy Strategy and will build on existing regional coordination efforts leading to an integrated regional electricity strategy.</p> <p>Energy Efficiency – Prince Edward Island, in partnership with the Government of Canada, will pursue improved energy efficiency for all sectors in the province as outlined in the 2016 PEI Energy Strategy. The Strategy and forthcoming Climate Change Action Plan are key policy tools in reducing GHGs, driving economic growth and creating jobs locally and in the region. Prince Edward Island is committed to engaging in incremental actions through solutions for the built environment, including businesses and homes, as well as in new building construction. It has been clearly illustrated by research in the region that investing in efficiency is one of the most effective means of delivering jobs and economic growth widely – across sectors and regions – while reducing emissions and providing savings to consumers. With a predominantly rural population and some of the highest electricity rates in the country, particular consideration will be given to low income Island families, and sectors that may find the transition to a lower-carbon environment challenging.</p>
Newfoundland & Labrador	Renewable Energy – Newfoundland and Labrador and the Government of Canada intend to jointly explore opportunities to develop renewable energy, including such actions as <u>enhancing hydroelectric capacity</u> , <u>increasing transmission infrastructure</u> , and <u>offsetting diesel</u> use in small-scale off-grid electricity systems. These efforts will also seek to maximize collaboration with other Atlantic provinces in the electricity sector, contributing to both the Atlantic Growth Strategy and Canadian Energy Strategy, and will build on existing regional coordination efforts, leading to an integrated regional electricity strategy.

PT	Key Action
	Energy Efficiency – Newfoundland and Labrador and the Government of Canada intend to jointly explore opportunities to develop energy efficiency programming, improve energy codes, and support fuel switching in all sectors reliant on fossil fuels.
Yukon	Advancing Renewable Energy – Yukon government and the Government of Canada will partner in advancing renewable energy projects in Yukon. This will improve the energy infrastructure in Yukon, including developing new renewable energy sources to provide clean energy for current and future electricity needs. It will also support remote communities in diminishing their reliance on diesel for electricity and will support the expanded use of biomass as a cleaner option for heating in Yukon. A Yukon Biomass Strategy will also be developed to guide the development of a biomass energy sector in the territory.
	Energy Efficiency – Yukon government, in partnership with the Government of Canada, will support energy efficiency through the retrofitting of existing buildings. Sound investments in retrofits and new energy efficiency projects will be supported by expanding the capacity for collecting, analyzing, and reporting emissions data that will help identify the areas of greatest opportunity for reducing emissions. Yukon will also carry out detailed energy audits of seven high-consumption Yukon government buildings.
	Green Innovation and Technology – Yukon government and the Government of Canada will partner on new research and pilot projects that will explore promising areas for climate action in the north, such as seasonal energy storage, cleaner transportation options, and community-level renewable energy generation.
Northwest Territories	Taltson Hydro Expansion and Transmission Links – The proposed Taltson hydro expansion is a small scale run of river hydro project that could be developed with little environmental impact next to the existing power plant, on an already developed river, and combined with a transmission link to provide a green energy corridor to our southern neighbours. The expansion of the Taltson hydro facility would help reduce Canada's GHG emissions by 360,000 tonnes annually for 50-plus years. The 60 MW expansion of the Taltson hydro facility could be built in partnership with NWT Indigenous governments, creating economic opportunities for Indigenous-owned businesses across the North. The NWT and Government of Canada will undertake technical and feasibility studies as a first step, including the NWT launching the environment assessment process.
	Renewable Solutions for Off-Grid Diesel Communities – The Government of Canada and the GNWT will explore opportunities for reducing reliance on diesel in off-grid communities. For example, the Inuvik Wind Project could produce between 2 and 4 megawatts of wind energy for the Town of Inuvik. The project would reduce GHG emissions by 4,300 tonnes per year and eliminate the need for 1.3 million litres of diesel annually in the largest diesel community in the NWT, and help reduce the cost of living for residents. For other off-grid diesel powered communities of the NWT, a suite of renewable solutions such as solar and wind in combination with energy storage systems and variable generators could reduce diesel use and emissions by 25 percent, an annual GHG elimination of nearly 3000 tonnes

PT	Key Action
Nunavut	<p>Electricity Generation – Nunavut and the Government of Canada will assess the economic and technical feasibility of electrification through hybrid power generation in Nunavut's communities. Hybrid power generation would significantly reduce emissions while at the same time ensure that Nunavut's isolated communities have reliable power.</p>
	<p>Energy Efficiency – Nunavut and the Government of Canada will work together to develop a retrofit program to increase the energy efficiency of public and private housing. Investment in safe and energy efficient housing is a key component of building strong resilient communities in the Arctic.</p>

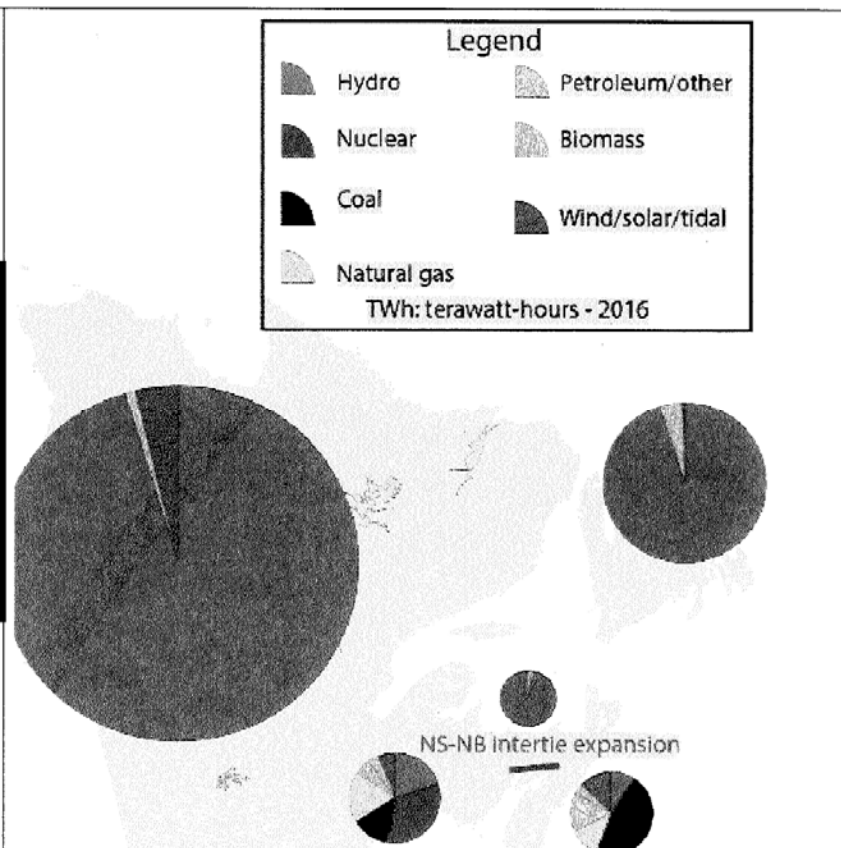
Potential "early-win" electricity transmission lines – Atlantic Canada

NB-NS intertie expansion

This is a critical project for enabling coal phase-out in NS. Atlantic RECSI partners determined that this project would be required under any future scenario of generation build out in Atlantic Canada. The project was cited in the Energy and Mines Ministers Communique in August 2017.

There are benefits to all Atlantic Provinces as it can enable more resource development and sharing within the region.

NB IBA allocation - \$347,151,232
 NS IBA allocation - \$381,914,606
 PEI IBA allocation - \$228,147,387
 NL IBA allocation - \$302,364,807



Potential "early-win" electricity transmission lines – Western Canada

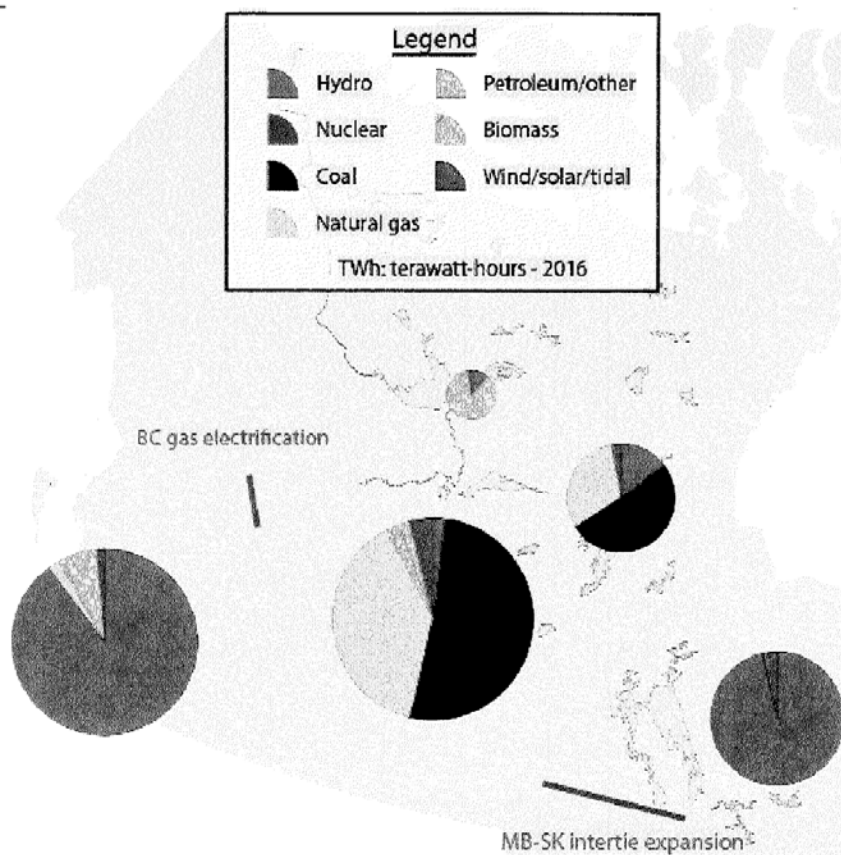
BC gas electrification

The line would provide more power that is reliable to the Northern BC community to facilitate the electrification of gas production. The electricity would come from a variety of sources, including hydro and wind.

MB-SK intertie expansion

MB and SK have been exploring a few scenarios to expand intertie capacity to assist SK in their transition away from coal. The most ambitious scenario involves the construction of an 1150 MW line from Winnipeg to Regina.

BC IBA allocation - \$1,115,494,721
 AB IBA allocation - \$1,001,082,871
 SK IBA allocation - \$416,334,673
 MB IBA allocation - \$451,790,568



DEPUTY MINISTER OVERSIGHT COMMITTEE ON THE PAN-CANADIAN FRAMEWORK ON CLEAN GROWTH AND CLIMATE CHANGE

Title: Update on Strategic Interties

Item to be presented by: Christyne Tremblay, Deputy Minister, Natural Resources Canada


Objective

- To provide an update on NRCan's work with provinces to study electricity interties, and to discuss and seek guidance on the challenges and opportunities regarding potential federal funding for intertie projects.


Context/Current Status

- NRCan is in the process of concluding its regional electricity studies with the Western and Atlantic Provinces and relevant electric utilities. These studies will identify the most promising electricity generation and transmission projects that can reduce greenhouse gas emissions. Final results are expected in the coming week, with summary reports to be published shortly thereafter.
- Strategic interties are important for the Government of Canada because of their potential to directly support significant greenhouse gas emissions reductions in the electricity sector, as well as indirectly via electrification. The primary federal levers for supporting these projects are the Green Infrastructure stream of Infrastructure Canada's Integrated Bilateral Agreements (IBAs) and the Canada Infrastructure Bank (CIB).
- Preliminary results identify both smaller and relatively more advanced electricity transmission projects that could potentially be supported through Green Infrastructure IBAs, as well as larger transformative projects, which may be potential candidates for consideration by the CIB.
- The key advanced projects that have been identified as potential early wins are between:
 - Nova Scotia (NS) and New Brunswick (NB)
 - Saskatchewan (SK) and Manitoba (MB)
 - British Columbia (BC) and Alberta (AB)
- INFC intends to sign IBAs with provinces and territories by March 31, 2018, after which each province and territory will be responsible for prioritizing projects for funding.
- Provinces must direct a minimum of 45 percent of their allocation towards projects under the Climate Change Mitigation sub-stream of Green Infrastructure, which could include projects that increase capacity to generate more clean energy and increase capacity to manage more renewable energy.
 - These projects will be required to submit GHG mitigation assessments demonstrating expected reductions in GHG emissions.
 - The degree to which the Green stream supports large-scale electricity projects, such as grid interties, will depend primarily on whether the provinces or territories choose to prioritize these projects for funding.
 - Project costs will also be a factor, as provinces would need to balance potential electricity projects with other climate change mitigation priorities.
- Deputy Minister Tremblay has held bilateral calls with NS and NB, as well as SK and MB to discuss the most prospective electricity interconnection projects that could be supported through


IBA allocations.



Considerations/Risks

- The CIB is now operational with appropriate range of authorities and open to receiving proposals and engaging with stakeholders. However, its priorities for follow up on proposals will depend on its internal capacity, which will take time to fully develop.
 - NRCan has been in regular communication with the CIB Transition Office regarding prospects for it to finance electricity infrastructure projects.
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Next Steps / Critical Path / Milestones

- Final results from the regional studies are expected soon, providing a useful basis for discussions with PTs.
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Decision Points

- Nil.

Supporting Documents

- Nil.

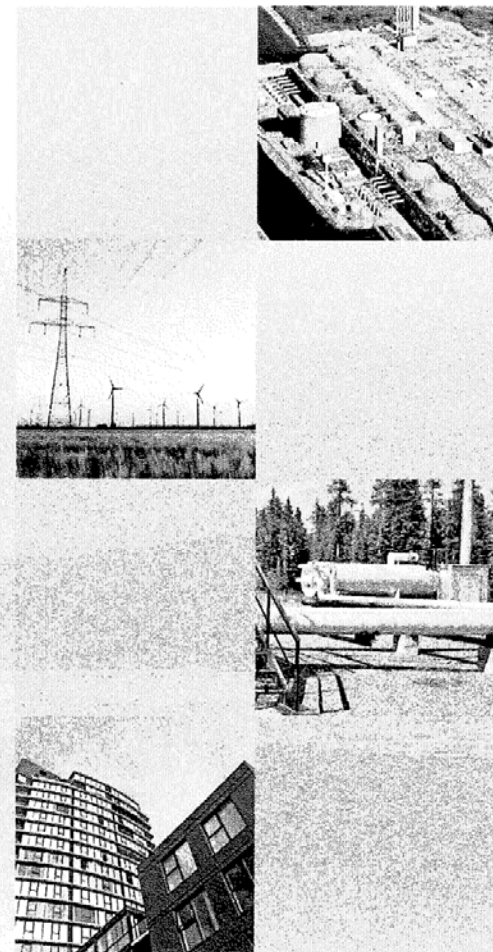


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Implementing Strategic Interties to support the Pan-Canadian Framework

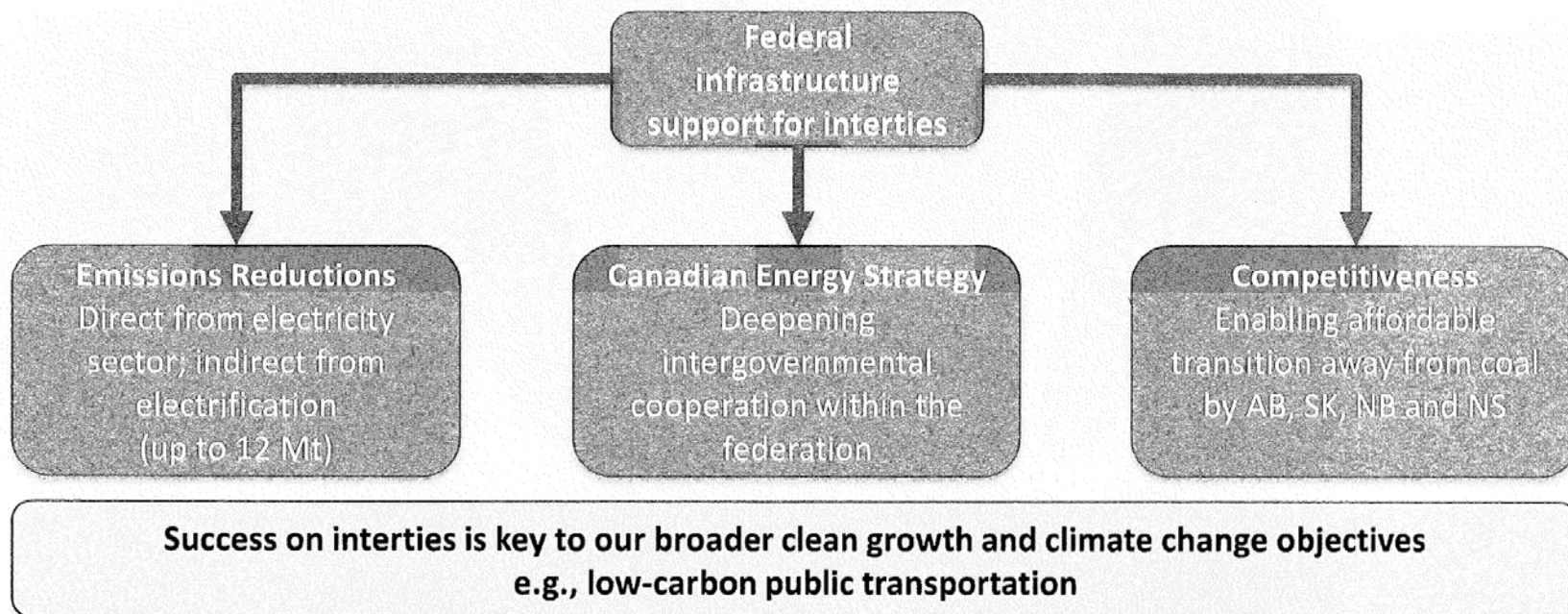
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Strategic interconnections are at the centre of multiple government priorities

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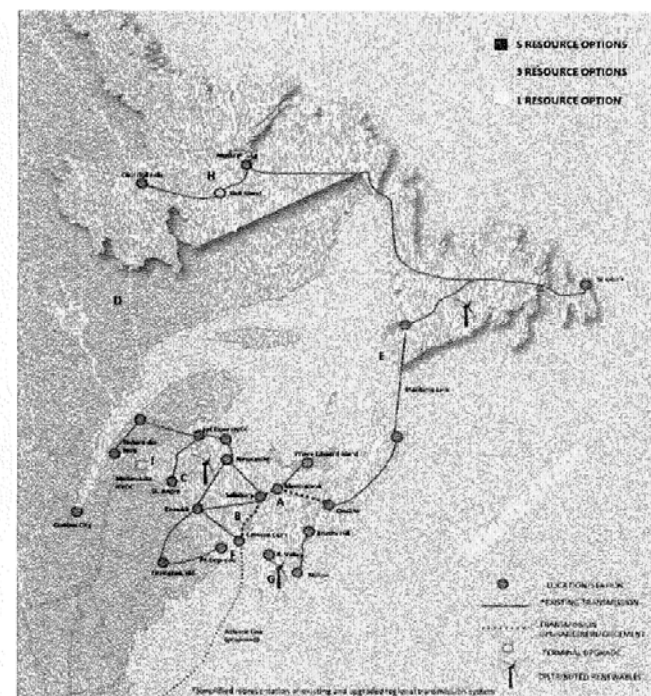
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NRCan Regional Dialogues are identifying opportunities

- Identifying promising electricity infrastructure projects with potential for GHG reductions
 - Other intertie projects may have merit based on their economic development potential (e.g., electrification of remote mining sites)
- Dialogues formed among 4 Western provinces (+ NWT) and 4 Atlantic provinces
- Variety of electricity supply and transmission options under consideration
- The results will include some economic impacts (i.e. costs to electricity consumers)
- Analytical and modelling results to inform future infrastructure investment decisions
- Results by end of March 2018

Atlantic RECSI Scenarios



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Senior-level engagement is helping to focus provincial attention

Degree of federal support shifts costs
from the local rate base to the federal
tax base



Larger, transformational projects will have correspondingly
larger impacts and costs



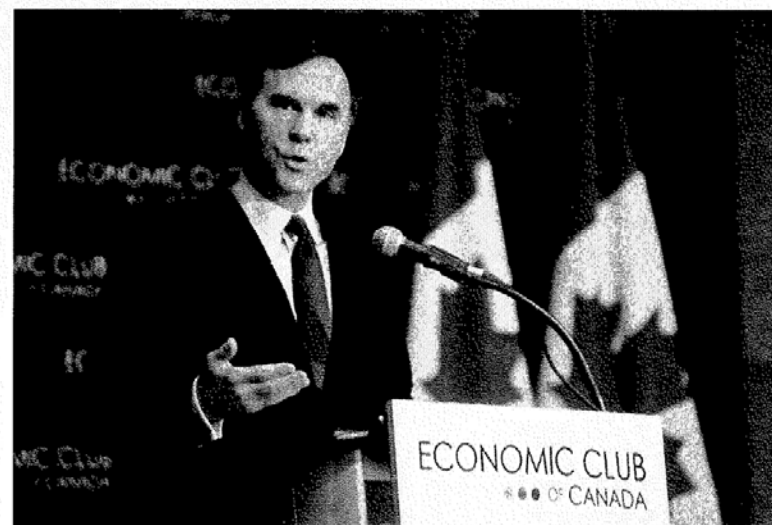
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Federal infrastructure supports can help projects advance

Primary federal levers for supporting interties:

1. INFC's Canada's Integrated Bilateral Agreements (IBAs)
 - Electricity projects (including interties) face many competing infrastructure priorities
2. Canada Infrastructure Bank (CIB)
 - Certain types of projects that leverage private sector involvement may be feasible for financing, but not all



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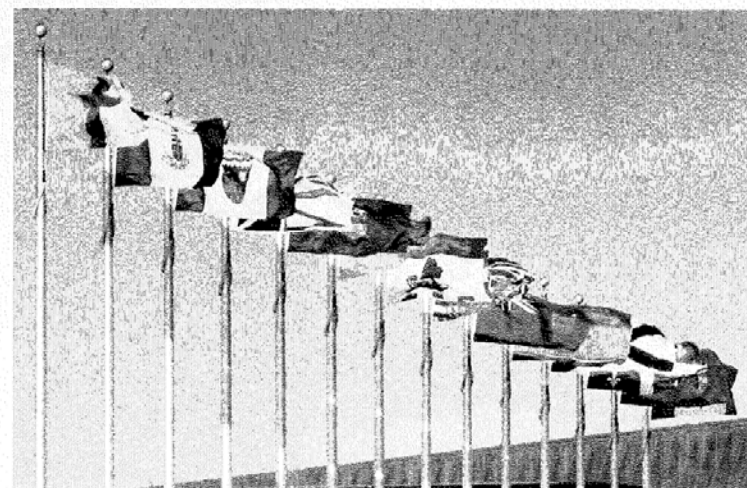
Next steps leading to success

Coming months:

- Finalize results of regional dialogues
- Secure provincial support for inclusion of interties as candidate for IBA support
- Continued work with CIB to assess suitability of intertie projects for Bank

Medium-term:

- Build on in-principle support for interties to secure agreement on early-wins



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Questions for Discussion

- How can we better use each of our respective engagements with PT counterparts to raise the profile of interties?
- We are counting on interties for significant emissions reductions (up to 12 Mt); if these projects do not advance where will these reductions come from?
- How do we increase positive incentives for the PTs to advance interties without establishing new programs/funding envelopes?



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IBA Green Infrastructure Allocations:

Province	Green Stream Allocation	Minimum Floor for Mitigation Projects (45%)
Nova Scotia	\$381,914,606	\$171,861,573
New Brunswick	\$347,151,232	\$156,218,054
British Columbia		\$406,437,624
Saskatchewan		
Manitoba		\$91,930,755

Potential Pressures Linked to Projects Identified by NRCan (see ANNEX B):

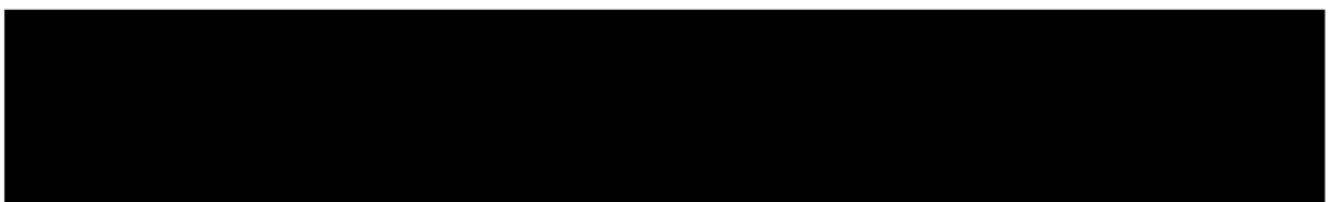
	Combined Green Allocations	Combined Mitigation Floor

	Total Pressure on Allocations (\$)	Percentage of Combined Floor (%)
Max. ³ federal share of project		

	Total Pressure on Allocation (\$)	Percentage of Mitigation Floor (%)
Max. federal share of project		

	Combined Green Allocations	Combined Mitigation Floor

	Total Pressure on Allocations (\$)	Percentage of Combined Floor (%)
Max. federal share of project		



BACKGROUND: OVERVIEW OF THE ELECTRICITY SECTOR**Quick Facts**

- Canada generates 3% of the world's electricity.
- Canada is the world's 3rd largest exporter of electricity, behind France and Germany.
- Canada generates 80% of its electricity supply from non-emitting sources, and 64% of the total supply is generated from renewables.

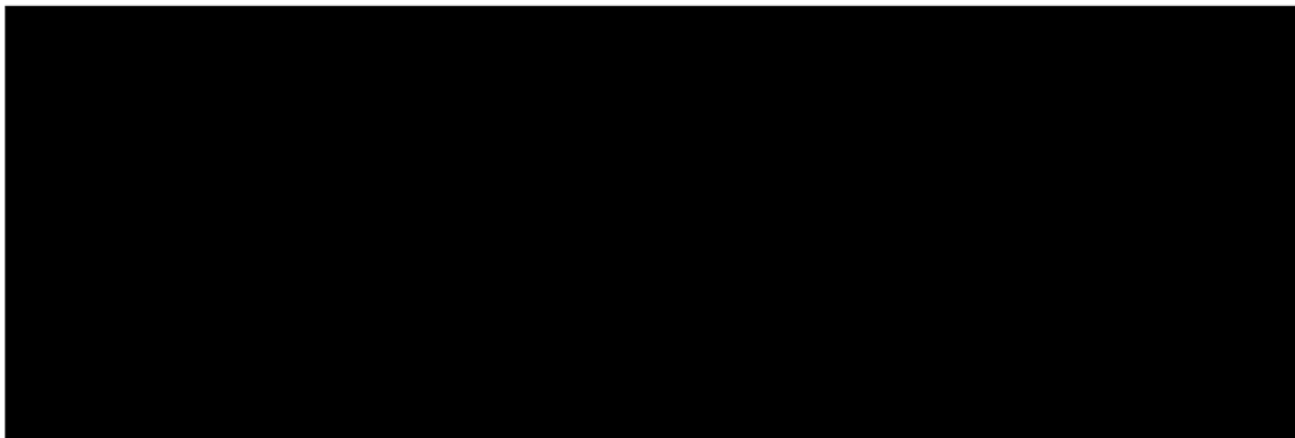
Market Information

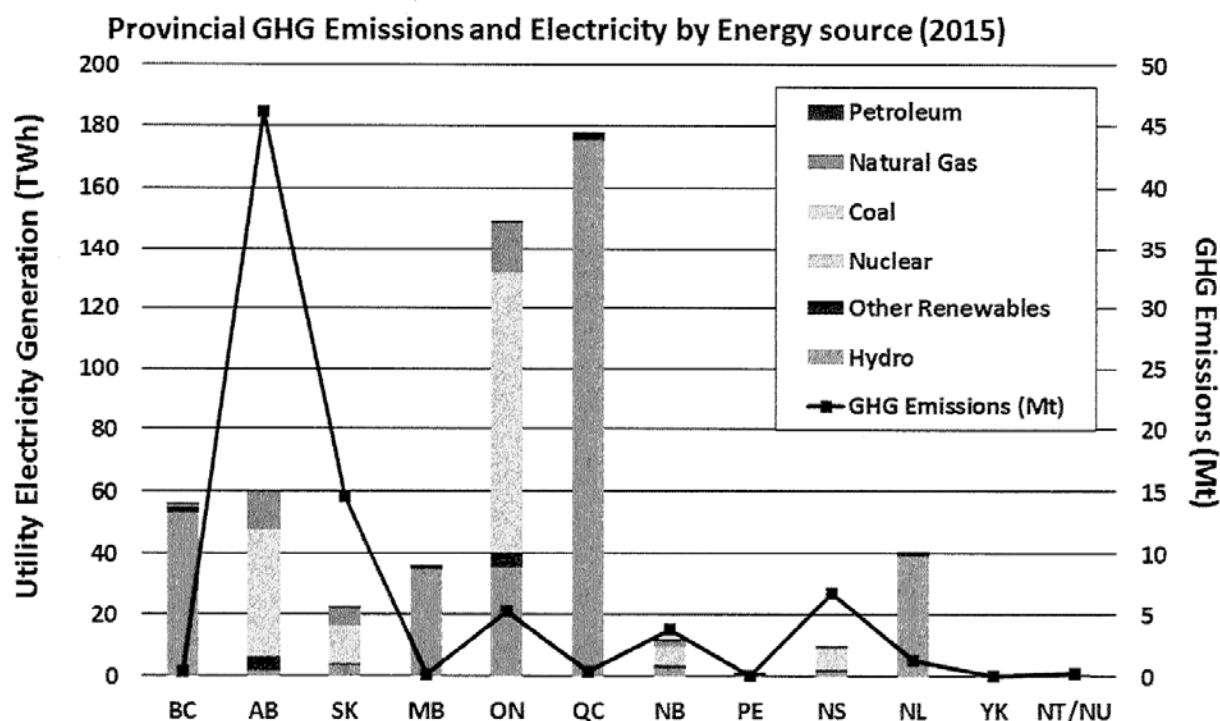
Canada, the U.S., and Mexico are generally viewed as a single integrated energy market, and all three countries are members of the North American Electric Reliability Corporation. As such, several provinces are members of U.S.-based entities or have been granted their own status as comparable entities to facilitate electricity sales. The province of Manitoba participates in a U.S.-based Regional Transmission Organization, while Alberta and Ontario are recognized as Electric Systems Operators. British Columbia, Quebec, Newfoundland and Labrador, and New Brunswick are also significant exporters of electricity to U.S.-based Independent System Operators (which are generally equivalent to Electric Systems Operators).

In 2017, Canada exported an estimated \$7.96 billion USD in electricity to the United States and also imports small amounts of American electricity. Hydro-Quebec has also recently signed a 20-year agreement to provide Massachusetts with hydroelectricity. This contract is expected to generate over \$10 billion in revenue for Quebec.

Grid Integration Priorities and Related Trade Concerns

Integration of the Canadian electricity grid is a key climate change priority that would enable the flow of more renewable electricity into provinces and territories with non-renewable grids. Grid integration is a critical enabler of electrification in other sectors such as transportation, transit, and the built environment, which would further reduce Canada's greenhouse gas (GHG) emissions.





Source: *Environment and Climate Change Canada*

Coal Phase-Out

In the fall of 2016, Canada committed to a phase-out of traditional coal-fired electricity by 2030. Canada will publish updated coal regulations in the months ahead. This will help reduce Canada's reliance on coal, support the Government of Canada's ambitious goal of reaching 90% non-emitting electricity generation by 2030, and advance national climate change priorities.

Canada and the United Kingdom have also jointly established the 'Powering Past Coal Alliance'. At its launch in late 2017, 27 national, provincial, state, and municipal governments endorsed a declaration to support the rapid phase-out of traditional coal power.

Some provinces and territories expect to use natural gas as a transition fuel to support the phase out of coal, and have explicitly identified this as a key action under the Pan-Canadian Framework on Clean Growth and Climate Change. Ontario has already phased out its coal production and Manitoba will close its last ancillary coal-powered generating unit in 2019. Saskatchewan and Nova Scotia expect to be reliant on coal into the 2040s, and New Brunswick has stated that while eliminating its last coal plant by 2030 would be ideal, this is contingent on the federal government providing adequate support to minimize impacts on both power bills and the provincial economy. Should these conditions fail to materialize, the province will aim for a coal phase-out by 2040.

Coal and Natural Gas Regulations

As part of the Pan-Canadian Framework on Clean Growth and Climate Change, federal, provincial and territorial governments agreed to work together to increase the amount of electricity generated from renewable and low-emitting sources.

To support this goal, the Government of Canada recently published two draft regulations:

1. Proposed amendments to the Reduction of Carbon Dioxide Emissions from Coal-fired Generation of Electricity Regulations (2012) which would accelerate the phase-out of traditional coal-fired electricity units to 2030.
2. To complement the accelerated phase-out of coal-fired electricity, proposed GHG regulations for natural gas-fired electricity would cover new natural gas-fired electricity units and coal-fired units that are converted to run on natural gas.

The draft regulations for coal and natural gas-fired electricity were published in the Canada Gazette, Part I, on February 17, 2018 and were subject to a 30-day comment period. Final regulations will be published in Canada Gazette, Part II, approximately one year after the close of the comment period.

Amendments to the coal regulations are expected to result in cumulative greenhouse gas reductions of 100 million tonnes (Mt) over the 2019 to 2055 period, including 16Mt in 2030.

The expected benefits from the proposed amendments over 2019-2055 would be \$4.9 billion. That includes \$3.6 billion in avoided climate change damage and \$1.2 billion in health benefits from reduced air pollutant emissions. The total cost for complying with the proposed amendments is estimated to be \$2.2 billion over 2019-2055, resulting in a net benefit of \$2.7 billion.

These regulations, along with the introduction of a carbon tax in certain jurisdictions, will likely help to reduce dependence on fossil-fuel based electricity generation and further decrease emissions.

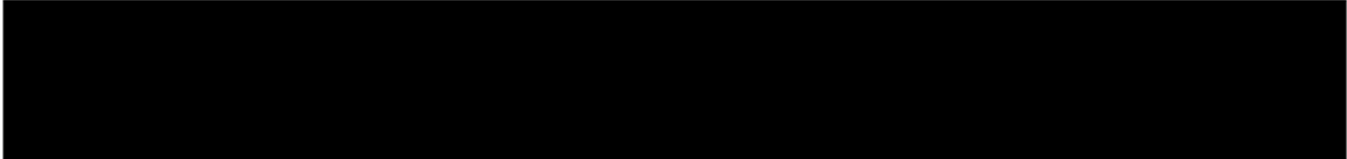
The Canadian Energy Strategy

The Canadian Energy Strategy, adopted in July 2015, charted a principles-based path to sustainable energy development which speaks to both electricity production and the development of energy resources.

The strategy was prepared collaboratively by the provinces and territories to define an energy future that provides energy security, contributes to economic growth and prosperity, and embodies a high standard of environmental and social responsibility.

The strategy seeks to position Canada as a global leader in providing a secure, sustainable and reliable supply of energy that is delivered with a high standard of environmental and social responsibility, consistent with efforts to reduce greenhouse gas emissions, and contributes to continued economic growth and prosperity for all Canadians.

Early actions identified in the strategy include:

- *Sustainability and Conservation:* Building on the ongoing efforts of individuals, businesses, governments and others to improve energy efficiency, to lower the carbon footprint and improve understanding of energy in Canada;
 - *Technology and Innovation:* Pursuing research and education initiatives to develop new technologies, build human capital, and become a more innovative and competitive provider of energy; and
 - *Delivering Energy to People:* Working to develop infrastructure, enhance energy regulatory processes, open markets and responsibly move energy products to the people who need them.
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Clean Energy Generation under the IBAs

INFC is working to define 'clean energy' under the Integrated Bilateral Agreements (IBAs).

